



Joint Reliability Plan Workshop



Overview of Reliability Planning and Programs California Public Utilities Commission

May 3rd, 2014





Staff Overview: How CPUC programs ensure system reliability

- Purpose of the Joint Reliability Plan Proceeding, *Meredith Younghein*
- Overview of the LTPP, *Neal Reardon*
- Overview of Resource Adequacy, *Megha Lakhchaura*
- Planned Long Term Reliability Assessment, *Cem Turhal*





Scope of the JRP Proceeding

Preliminary Questions being asked in R.14-02-001:

- How should the reliability need in CA be characterized?
- Are there risks created by resource retirements?
- Does current reliability framework need enhancement?
- What information is relevant to determining reliability concerns?
- Is Multi-Year RA the solution to reliability concerns?





Questions in JRP Track 1

- Should we place multi-year RA requirements on CPUC jurisdictional LSEs due to reliability needs?
- What are the potential costs and benefits?
- What alternatives should be considered?
- What types of capacity should be included in multi-year requirements? What duration?
- How should multi-year requirements be designed to mitigate costs/maximize benefits?

JRP Workshop “A” JRP Workshop “B”





Long-Term Planning and Procurement (LTPP) Overview

- *Forecast* reliability needs 20 years out by evaluating years 1-10 and 11-20
- *Authorize* competitive procurement to address any identified needs
- Require utilities to file *procurement plans* indicating how they will meet customer needs over 10 years
- Provide *oversight* ensuring utilities are following the loading order and other state policies in an integrated manner
- Current Dockets:
2014 LTPP – R.13-12-010
2012 LTPP – R.12-03-014

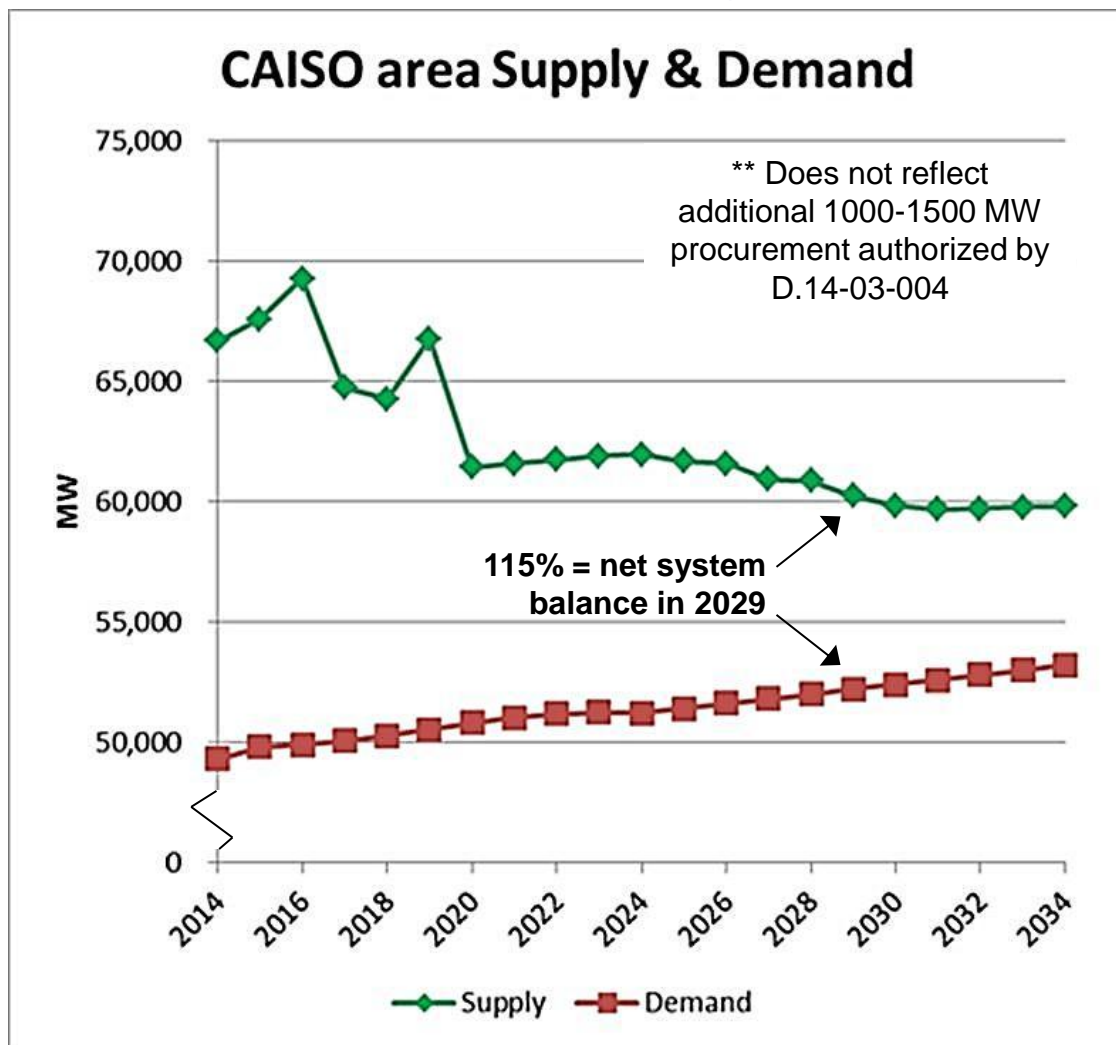




Trajectory Scenario	2014	2016	2018	2020	2022
<u>Demand (MW)</u>					
IEPR Net Load	49,442	50,994	52,308	53,723	54,993
AA-EE	157	1,115	2,056	2,914	3,818
Managed Demand Net Load	49,285	49,879	50,252	50,809	51,174
<u>Supply (MW)</u>					
1: Existing Resources	51,878	51,878	51,878	51,878	51,878
2: Resource Additions	1,195	4,113	4,354	7,267	7,386
Non-RPS (Conventional Expected)	15	329	329	329	329
RPS	1,180	3,784	4,025	5,738	5,857
Authorized Procurement	0	0	0	1,200	1,200
3: Imports	13,396	13,396	13,396	13,396	13,396
4: Dispatchable DR	1,952	1,995	1,999	2,003	2,006
5: Energy Storage Mandate	0	0	228	456	684
6: Resource Retirements	1,742	2,121	7,583	13,577	13,620
OTC Non Nuclear	650	985	5,791	11,685	11,685
Other (non-OTC thermal/cogen/other)	1,092	1,136	1,792	1,892	1,935
Net Supply = Sum [1:5] - 6	66,680	69,260	64,272	61,424	61,730
Net System Balance: Supply - Demand	17,395	19,381	14,020	10,615	10,556
Net System Balance: Supply / Demand	135%	139%	128%	121%	121%



LTPP Outlook: System Capacity is “Long”



LTPP Trajectory Scenario:
Supply resources are expected to exceed the Planning Reserve Margin through 2029 (before accounting for additional procurement authorized by D.14-03-004)

Why? In part:

- OTC retirements have driven new resource approvals in local areas
- Renewable resource additions to meet 33% retail electricity production in 2020
- Reduced demand forecasts



LTPP: CPUC will Authorize Procurement of Additional Flexible Resources if Needed

2010 LTPP (no actionable need):

- Parties (including CAISO) signed settlement to defer need determination for new resources.
- CPUC approved the settlement, finding no need to authorize new flexible resources at the time.

2012 LTPP (no actionable need):

- CAISO requested delay of flexibility modeling into the 2014 LTPP to focus proceeding on SONGS retirement.
- Preliminary modeling results suggested low to no need for new system flexibility resources.

2014 LTPP (in progress):

- Continues evaluation of California's long-term need for flexible resources building on years-long working group efforts to develop models.
- Testimony expected later in 2014.

To date, renewable integration modeling has shown no need for more flexible resources





Overview: the Resource Adequacy Program

Duration	Year-ahead and month-ahead planning and compliance program
CPUC jurisdictional load-serving entities (LSE)	Three investor-owned utilities Fourteen energy service providers Two community choice aggregators
Requirement	~ 90% of peak, > 95% flexible
Scope of program	Setting capacity requirements for LSEs Setting rules to calculate qualifying capacity for resources Compliance Plan for reliability challenges





RA fleet Changes over the years

- Shift in system critical stress times
- Influx of intermittent generation
- Retirement of steamers
- From just peak planning to operations planning





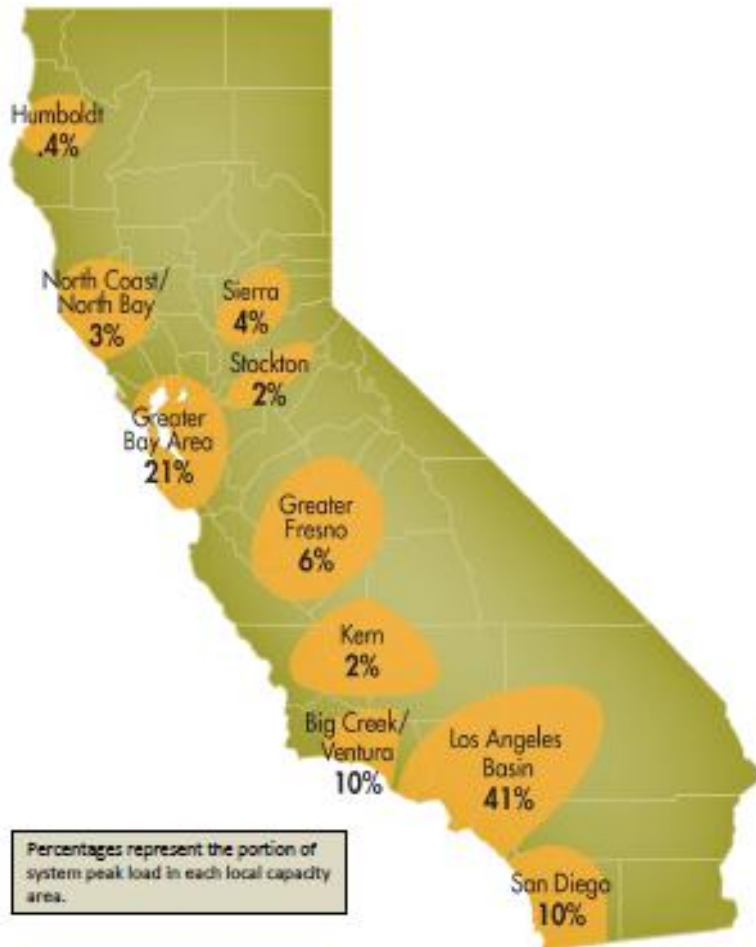
Resource Adequacy Obligations

Type of Capacity:	LSE Procurement Need Determination Based On:	Procurement Required by October Compliance Deadline for Next Year:
System	Planning Reserve Margin (PRM): 115-117% of peak forecast demand (1-in-2 year peak forecast).	90% of the PRM for summer (peak) months (May – Sept.)
Local	CAISO Local Capacity Technical Study results for transmission constrained areas.	100% of requirement (obligation is set as single value for entire year)
Flexible	CAISO Flexible Capacity Technical Study results based on 3 hour maximum ramp per month	90% of forecasted requirement for each month





Local Capacity Requirements (LCR)



CAISO Local Capacity Technical Study: power flow modeling determines LCR in 10 local areas using 1-in-10 year peak demand forecast with contingencies - loss of two major transmission elements (N-1-1)

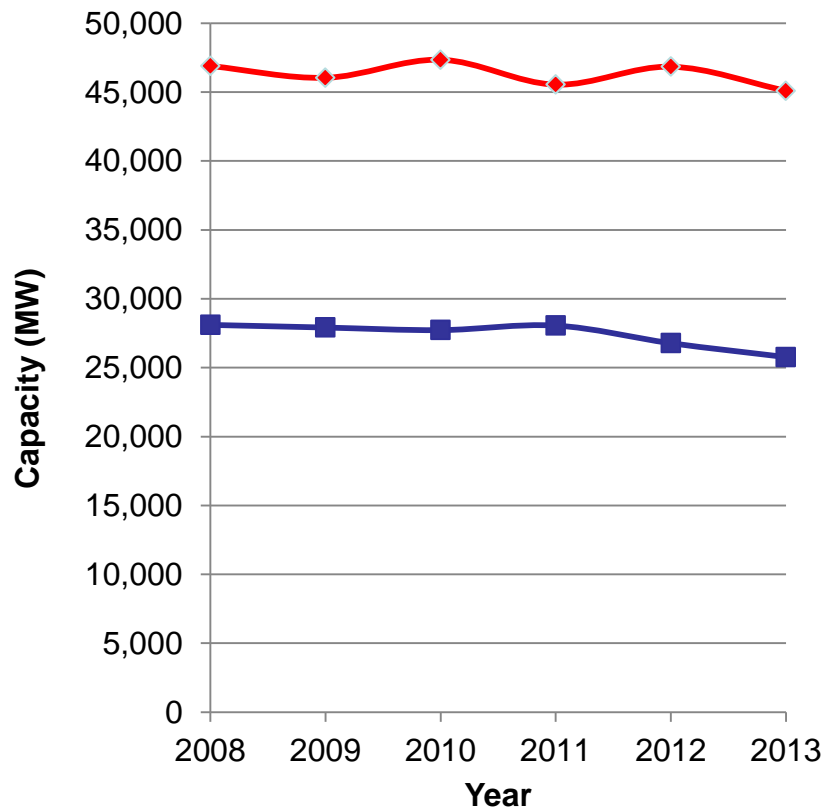


CPUC adopts local procurement obligations annually through decisions issued in RA proceeding





Local Capacity RA Requirement Amounts to around 60% of CAISO System Peak



—◆— CAISO Actual System Peak Demand

—■— Total Local Capacity Requirements adopted for CPUC Jurisdictional LSEs (RA Proceeding Decisions)

2013 Breakout:	MW
La Basin	10,295
Big Creek/Ventura	2,241
San Diego	3,082
Greater Bay Area	4,502
Other Areas	5,649
Total Local Requirements	25,769
CAISO System Peak in 2013 (6/28)	45,097





CPUC Enforcement and CAISO Backstop

- CPUC can levy penalties for Resource Adequacy violations (deficiencies, late filing, etc.)
 - Since RA program began in 2006, the CPUC has:
 - Issued 26 citations amounting in \$97,100 in penalties paid
 - Initiated 4 enforcement cases amounting in \$847,500 in penalties paid
- CAISO has “backstop” procurement authority
 - Only used to date for unexpected (“significant”) events and Exceptional Dispatch (totaling \$32 million through 2013)
 - CAISO has *never needed* to backstop to cure an LSE deficiency or a collective deficiency in a local area





Flexible Capacity Framework Adopted July 2013 (D.13-06-024)

- Adopted method for assessing flexible capacity need
 - Maximum continuous 3-hour ramp per month plus contingency
- Adopted eligibility criteria and counting conventions to determine resource's "flexible capacity" value
 - Flexible capacity (MW) is different from nameplate capacity
 - Resource must ramp and sustain energy output for 3 hours minimum
- CAISO FRAC-MOO Initiative:
 - Goal: develop "must offer obligation" for flexible resources
 - Will require resources to submit economic bids to CAISO markets (no self-scheduling) in certain hours.
 - Availability incentives





Flexibility Needs

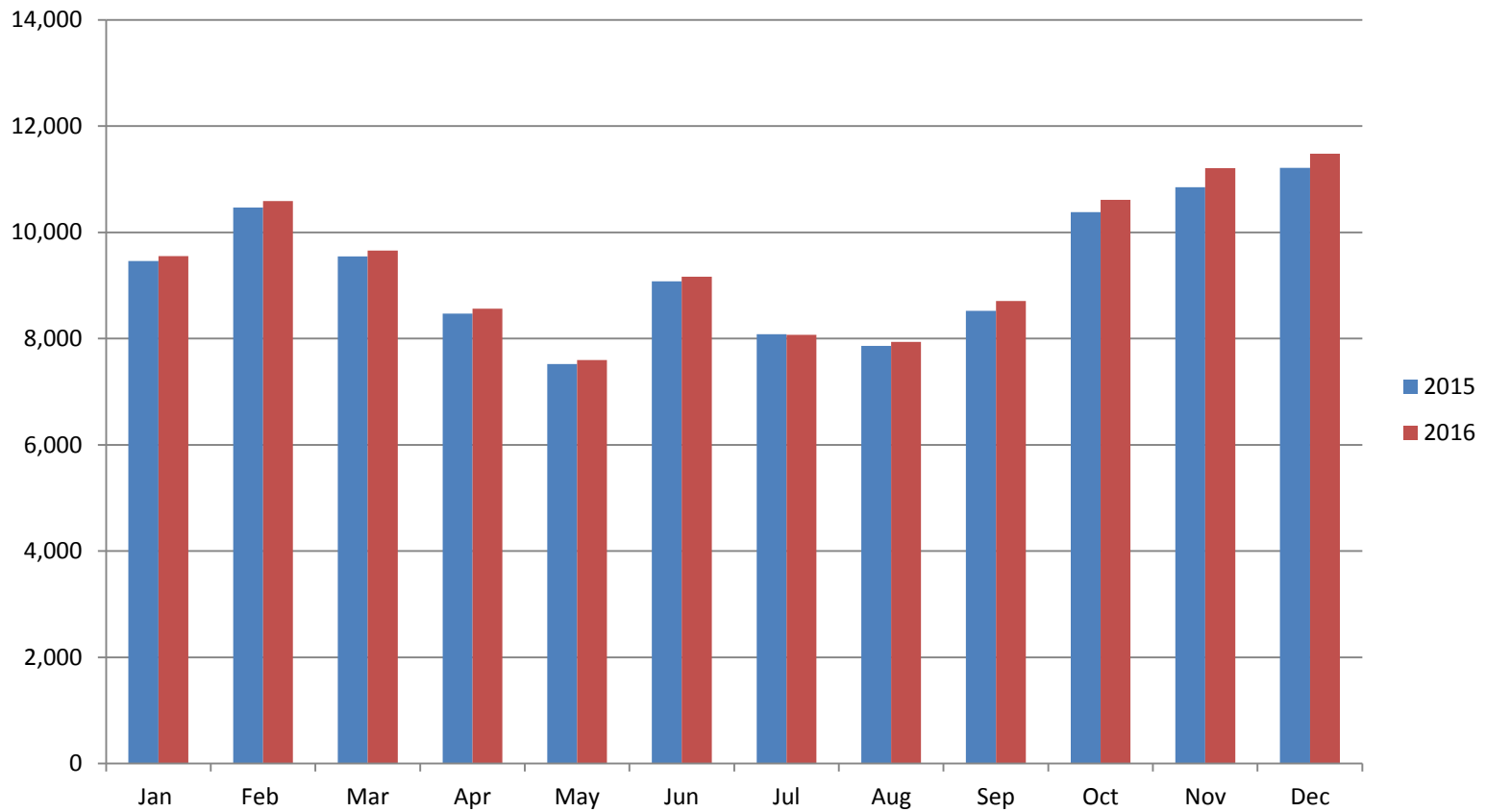
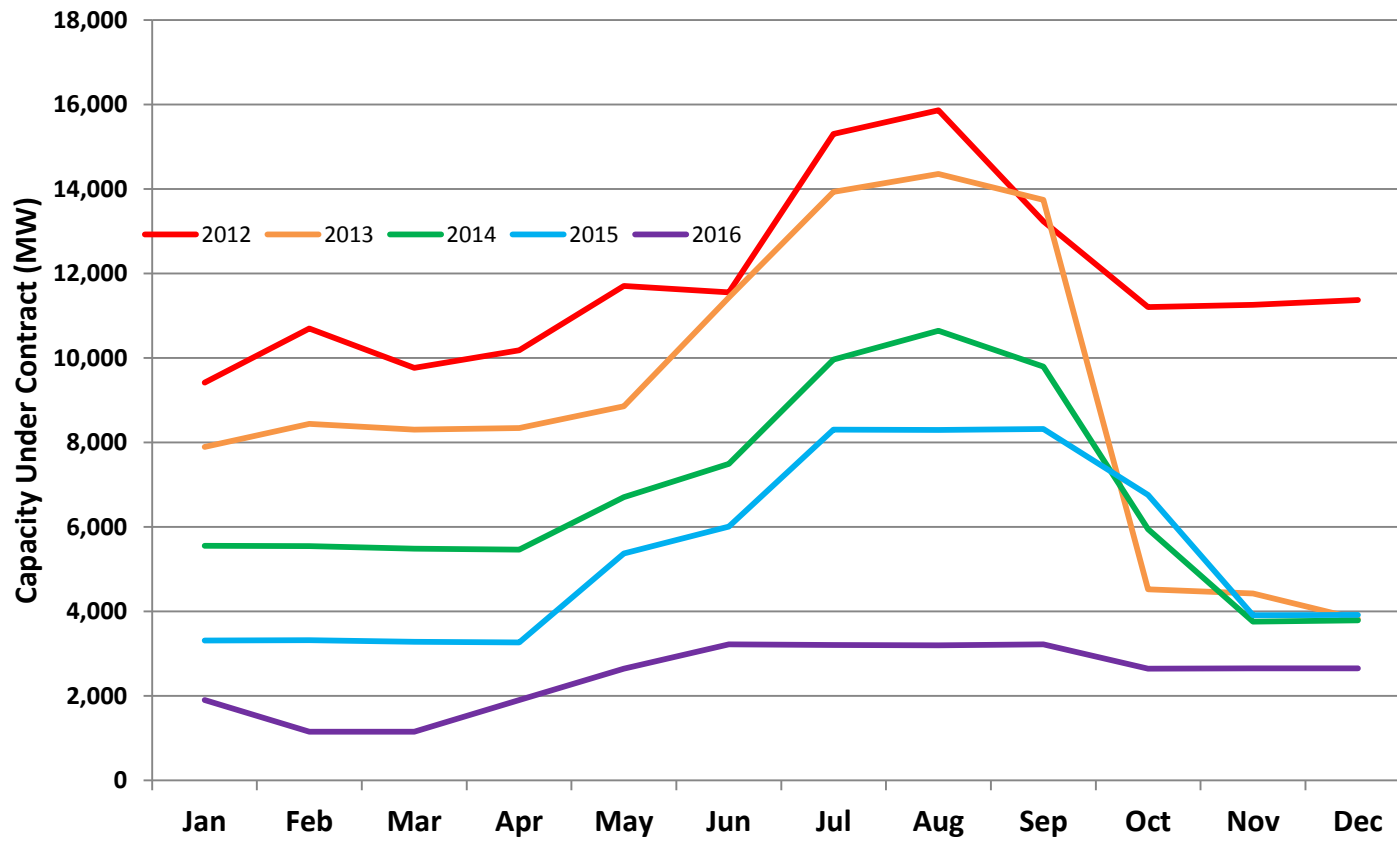




Figure 8. Contracted RA Capacity by Month, 2012- 2016
(from 2012 RA report)





Purpose of Track 2 Reliability Assessment

- Assess contracted capacity in the State
 - Recurring, formalized
- May become part of record in Track 1
- Depending on the results obtained from the data analysis:
 - Track 2 may lead into a decision of its own or serve as an evaluation of capacity under contract





Scope of JRP Track 2

- Short-Term
 - 1-4 year contracted capacity procurement assessment.
 - Short term capacity procurement need determination.
- Long-Term
 - 4-10 year contracted capacity procurement assessment.
 - Long term capacity procurement need determination.
- Next Steps
 - The Track 2 Workshop is expected to be held in August, 2014.





Next Steps

- 2nd Workshop on JRP Track 1: May 13th
- Will focus on potential design elements for multi-year forward RA
- Will consider, if implementing MY-RA:
 - What types of capacity?
 - What % of procurement is appropriate?
 - How should we forecast?
 - What duration? Annual, monthly, seasonal?
 - How to ensure consistency with loading order?
 - Etc.
- Staff Report/Proposal expected July 1





Questions for Discussion

- *Does the reliability need warrant multi-year procurement?*
- *Would it be likely to reduce risk of retirement concerns?*
- *What limits/constraints/rules would be needed?*
- *What are the likely costs and benefits?*
- *What data or analyses should be developed or considered?*
- *Would 2-3 year forward procurement promote development of preferred resources?*
- *What alternatives should the Commission consider that could achieve reliability goals?*

